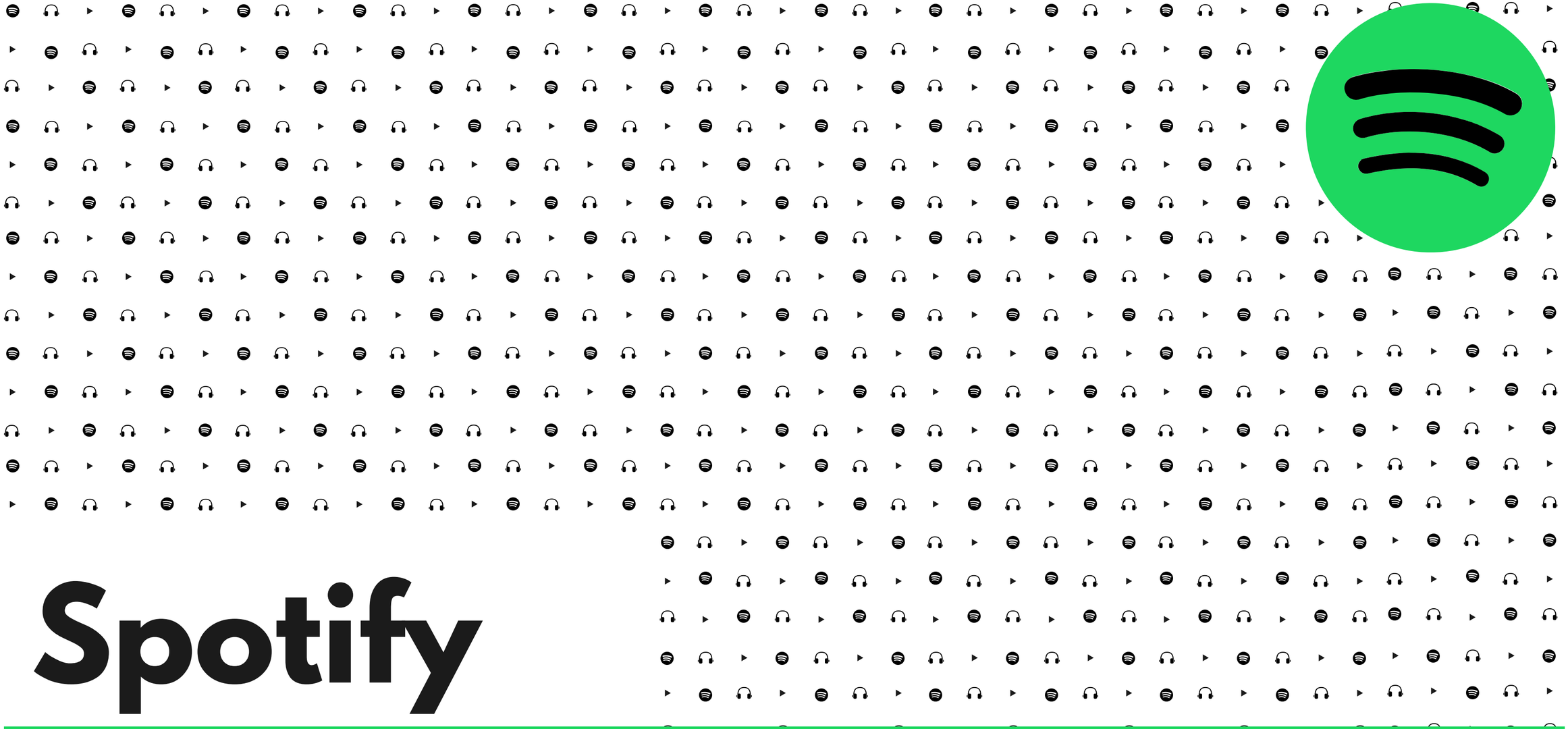
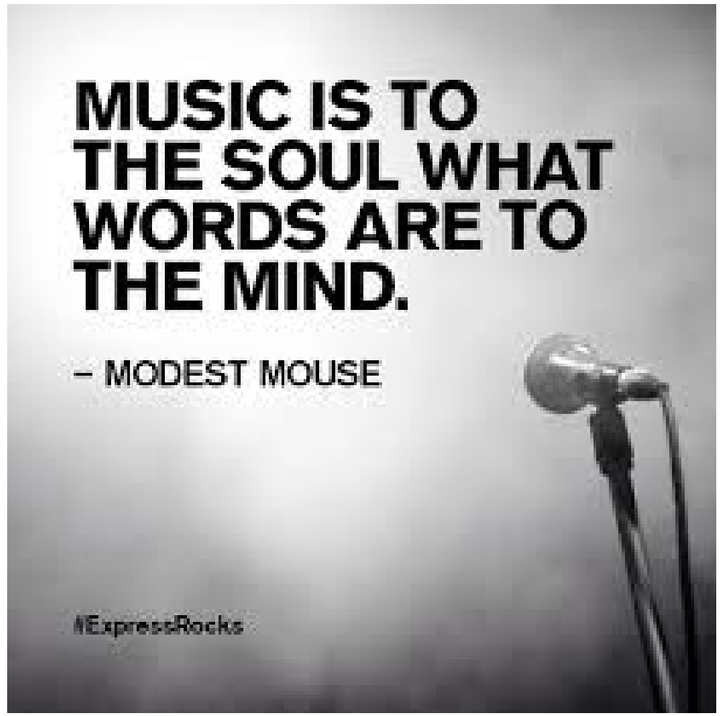


# Spotify

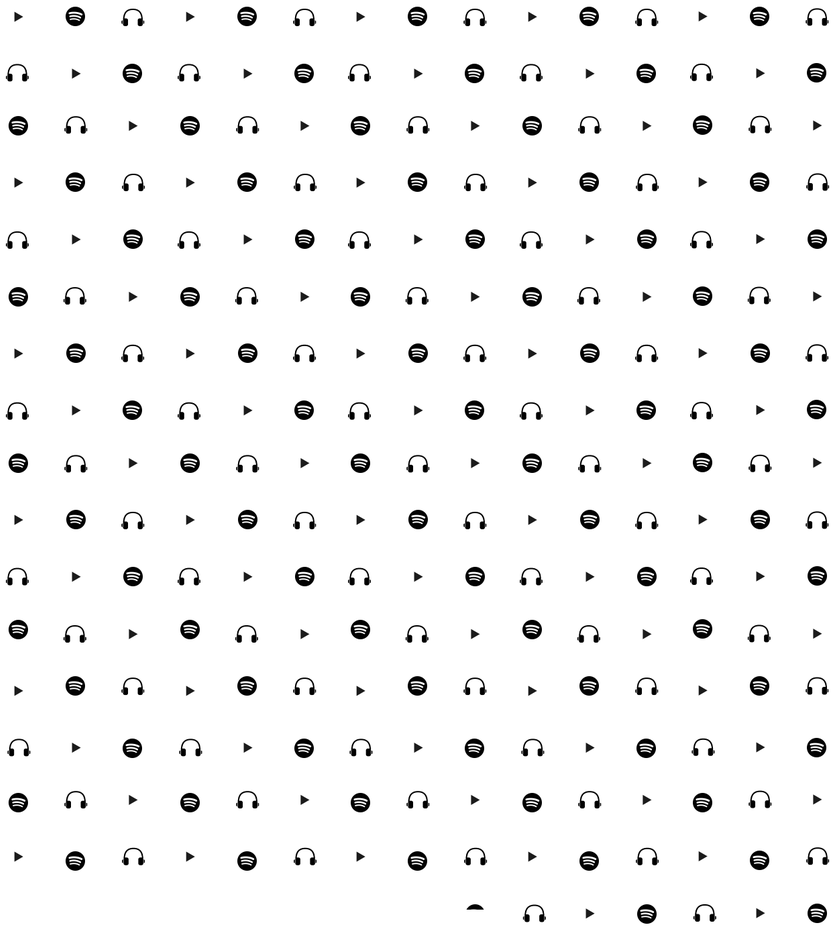
Alex Arnold, Scott Frazier, Samantha Lane, Jenette Smith

# Inspiration



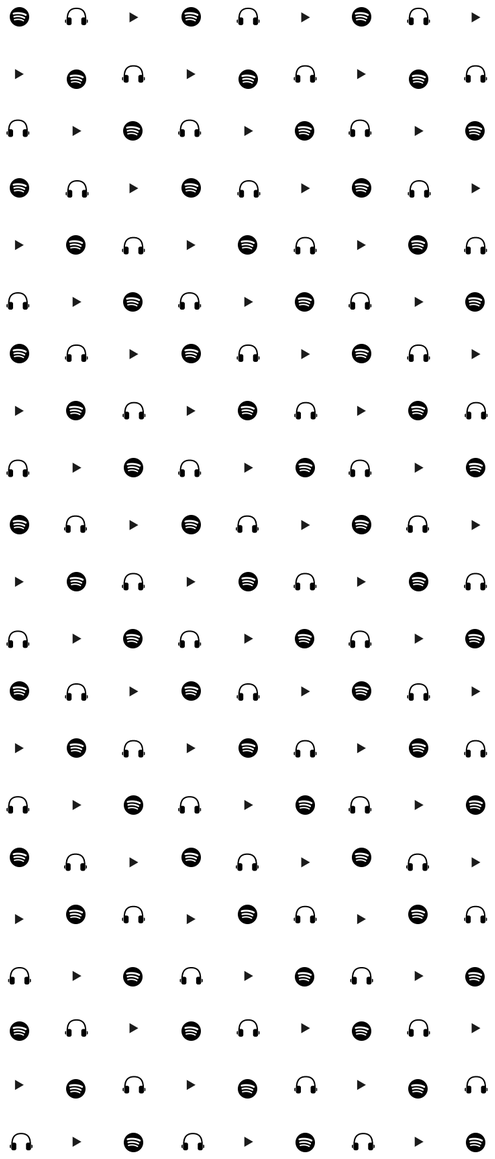

- Year of End Wrap Ups
- Spotify API
- Example visualizations from tableau
  - Map of World
  - Most songs streamed
- COVID-19 impacts on music

# AGENDA



SPOTIFY

- Hypotheses
- Data
- Audio Features
- Demo
- Conclusions
- Limitations & Future Work



# Hypotheses

## Hypothesis 1:

The United States has the highest streams out of country.

## Hypothesis 2:

Audio features, such as speechiness and danceability have increased over time.

# Data

## 01 Kaggle

- Spotify Dataset 1921-2020, 160k+ Tracks
- https://www.kaggle.com/yamaerenay/spotify-dataset-19212020-160k-tracks

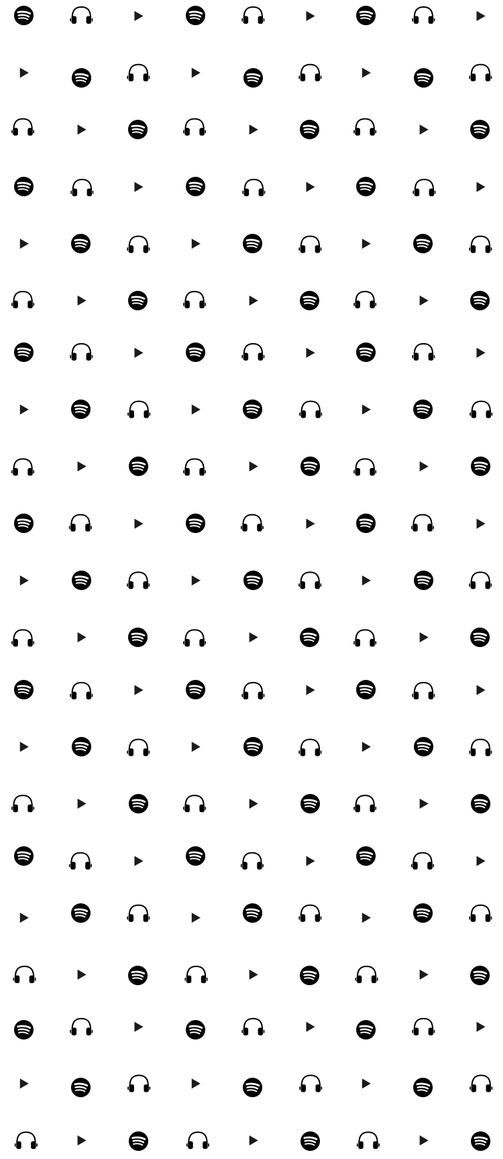
## 02 Streams of 2020 CSV

## 03 Streams of 2017 (Tableau)

- Add Tableau Link

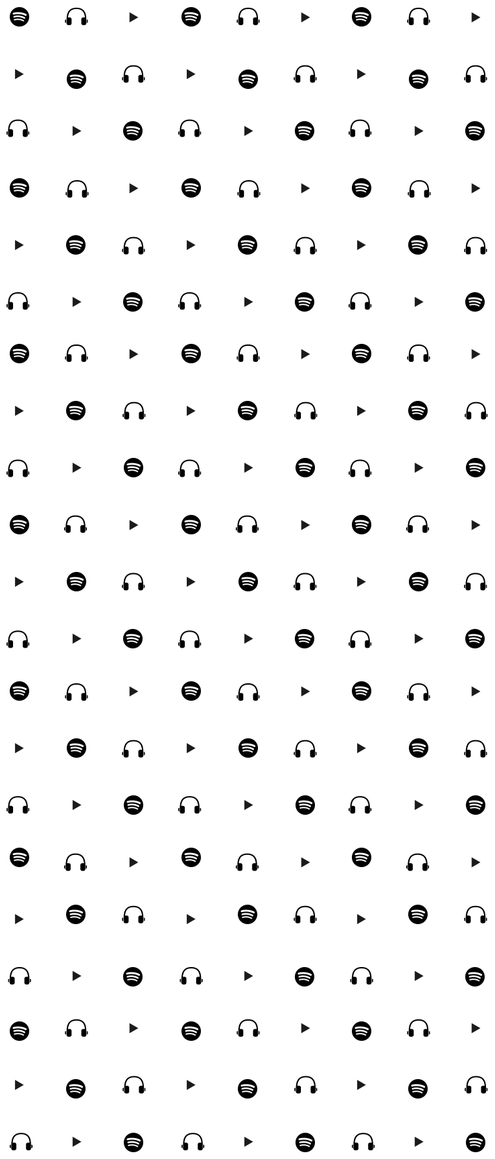
## 04 Census CSV

- Country Data



# Audio Features

- **Acousticness-** whether or not track is acoustic. 1- high confidence acoustic
- **Danceability-** how suitable a track is for dancing based on combo of tempo, rhythm stability, beat strength, and overall regularity. 1- most danceable
- **Duration_ms-** length of track in milliseconds
- **Energy-** perceptual measure of intensity and activity
- **Instrumentalness-** predicts whether a track contains vocals
- **Key-**
- **Liveness-** detects the presence of an audience in the recording
- **Loudness-** overall loudness of a track in decibels (dB)
- **Mode-**
- **Speechiness-** detects presence of spoken words in a track
- **Tempo-** estimated tempo of track in beats per minutes
- **Valence-** describes musical positiveness conveyed by a track



# Conclusions

## Hypothesis 1:

Accept the alternative hypothesis.

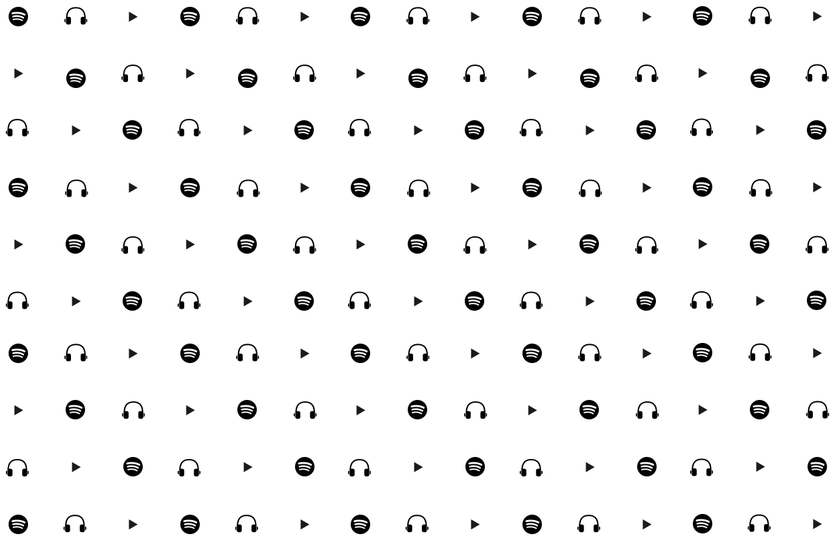
The United States streams the most music.

## Hypothesis 2:

Fail to reject the null hypothesis.

Speechiness has not increased over time while danceability has increased over time.

# Limitations & Future Work



## 01 Limitations

- Utilizing more up-to-date data (ex. 2007 Streaming Data)
- Vast genre categories difficult to group genre data to investigate further
- D3 knowledge
- Time

## 02 Future Work

- Using Spotify API for Top Streams 2020 Data
- Utilizing GeoJSON to create MapBox map
- Comparing audio features and genres

# References


- https://www.kaggle.com/yamaerenay/spotify-dataset-19212020-160k-tracks/notebooks
- https://plotly.com/javascript/
- https://public.tableau.com/profile/glenn.cable#!/vizhome/Book5_1502/worldmap
- https://raw.githubusercontent.com/plotly/datasets/master/2014_world_gdp_with_codes.csv
- Spotify logo:
- Inspiration:

# Thank you